Nebraska

Nebraska is the only State with no investor-owned utilities operating within its borders. Its population is the fourteenth smallest in the Nation. It is also fourteenth lowest in utility generating capability. Most of the State's capability is powered by coal (55 percent) but there is also a significant share of nuclear capability (22 percent). In fact, two of the five largest plants in the State, Cooper and Fort Calhoun, are nuclear plants. The remaining three are coal-fired. The Gentleman plant, which lies in the west central part of the State, is the largest plant in Nebraska and is owned by the largest utility—the Nebraska Public Power District. The remainder of the five largest plants lie on the Missouri River in the easternmost part of the State. Although 10 percent of Nebraska's generating capability is fired by oil and 10 percent by gas, generation by these two sources were only 0.1 percent and 0.7 percent, respectively, in 1996.

While no coal is mined in the State, Nebraska's close proximity to the Powder River Basin's low-sulfur subbituminous coal deposits explains the prevalence of coal in the State's fuel mix. In 1996, 99.95 percent of coal delivered to electric utilities in Nebraska was from nearby Wyoming.[1] Low coal transportation costs (half is delivered by truck and half by rail) are also one of the major factors in accounting for Nebraska's relatively low cost of electricity. At an average price of 5.32 cents per kilowatthour, Nebraska ranks as the twelfth lowest in the Nation, and is significantly below the national average price of 6.86 cents per kilowatthour of electricity, despite its nuclear capability.

The State's use of low-sulfur coal also accounts for the State's low emissions of sulfur dioxide (SO_2), nitrogen oxides (NO_x), and carbon dioxide (CO_2). No Nebraska generators were cited by the Clean Air Act Amendments of 1990 to begin compliance with stricter emissions standards for SO_2 and NO_x. Emissions of SO_2, NO_x, and CO_2 ranked thirty-fourth, thirty-third, and thirty-seventh in 1996. The concentrations of these pollutants per square mile ranked forty-first, thirty-ninth, and forty-third, respectively, in 1996. Emissions for all three pollutants increased from 1986 to 1991, and then rose again from 1991 to 1996.

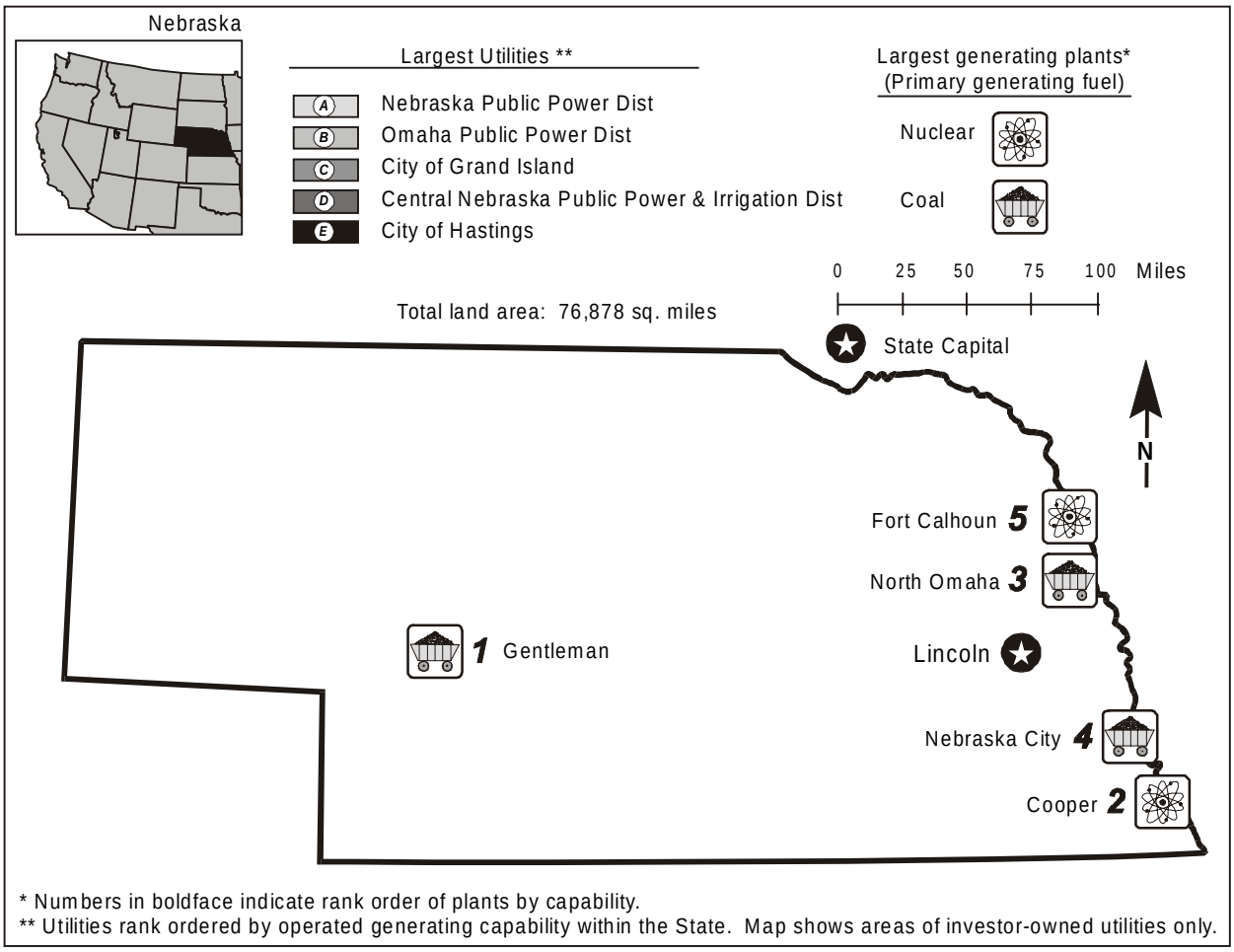
Nebraska was a net exporter of electricity in 1996. Retail sales in the State grew by 3.1 percent annually from 1986 to 1996. Sales to the industrial sector grew the most, at an annual rate of 5.1 percent. As mentioned above, Nebraska's average price of electricity across all customer classes was 5.32 cents per kilowatthour. The average price of electricity for the residential sector was 6.29, for the commercial sector it was 5.49, for the industrial sector it was 3.68, and for the "other" sector it was 6.49 cents per kilowatthour. The other sector includes public street and highway lighting, other sales to public authorities, sales to railroads and railways, and interdepartmental sales.[2]

Because Nebraska has no investor-owned utilities, Nebraska's stakes in the deregulation game differ from those of other States. In June 1996, legislation was enacted to allow a 3-year study of electric power industry restructuring, with reports due in December 1997 and December 1999. In February 1998, the first report was issued. It focuses on the existing structure of the industry in the State and how to improve it. The second report, due for completion in December 1999, will address competition issues and policy changes that are needed to keep public power viable in Nebraska.[3]

[1] Energy Information Administration, *Coal Distribution January-December 1996*, DOE/EIA-0125(96/4Q) (Washington, DC, April 1997).

[2] Energy Information Administration, *Electric Power Annual 1996 Volume II*, DOE/EIA-0348(96)/2 (Washington, DC, December 1997), Table 7.

[3] Energy Information Administration, Status of State Electric Utility Deregulation Activity, http://www.eia.doe.gov/cneaf/electricity/chg_str/tab5rev.html.



* Numbers in boldface indicate rank order of plants by capability.
** Utilities rank ordered by operated generating capability within the State. Map shows areas of investor-owned utilities only.

Table 1. 1996 Summary Statistics

Item	Value	U.S. Rank
NERC Region(s)		WSCC/MAPP
Net Exporter or Importer		Exporter
State Primary Generating Fuel		Coal
Population (as of 7/96)	1,648,696	37
Average Revenue (cents/kWh)	5.32	[a]12
Industry		
Capability (MWe)	W	[b]W
Generation (MWh)	W	[b]W
Capability/person (KWe/person)	W	[b]W
Generation/person (MWh/person)	W	[b]W
Sulfur Dioxide Emissions (Thousand Short Tons)	61	34
Nitrogen Oxide Emissions (Thousand Short Tons)	84	33
Carbon Dioxide Emissions (Thousand Short Tons)	18,511	37
Sulfur Dioxide/sq. mile (Tons)	0.79	41
Nitrogen Oxides/sq. mile (Tons)	1.09	39
Carbon Dioxide/sq. mile (Tons)	240.79	43

Item	Value	U.S. Rank
Utility		
Capability (MWe)	5,632	37
Generation (MWh)	27,322,697	37
Average Age of Coal Plants	21 years	
Average Age of Oil-fired Plants	21 years	
Average Age of Gas-fired Plants	30 years	
Average Age of Nuclear Plants	22 years	
Average Age of Hydroelectric Plants	46 years	
Average Age of Other Plants	--	
Nonutility[c]		
Capability (MWe)	W	W
Percentage Share of Capability	W	W
Generation (MWh)	W	W
Percentage Share of Generation	W	W

-- = Not applicable. W = Withheld.

Table 2. Five Largest Utility Plants, 1996

Plant Name	Type	Operating Utility	Net Capability (MWe)
1. Gentleman	Coal	Nebraska Public Power District	1,365
2. Cooper	Nuclear	Nebraska Public Power District	774
3. North Omaha	Coal	Omaha Public Power District	645
4. Nebraska City	Coal	Omaha Public Power District	585
5. Fort Calhoun	Nuclear	Omaha Public Power District	476

Table 3. Top Five Utilities with Largest Generating Capability, and Type, Within the State, 1996
(Megawatts Electric)

Utility	Net Summer Capability	Net Coal Capability	Net Oil Capability	Net Gas Capability	Net Nuclear Capability	Net Hydro/Other Capability
A. Nebraska Public Power District	2,614	1,590	159	17	774	75
B. Omaha Public Power District	2,027	1,229	321	--	476	--
C. City of Grand Island	207	100	--	107	--	--
D. Central Nebraska Pub P&I Dist	199	--	--	107	--	92
E. City of Hastings	123	72	--	51	--	--
Total	5,170	2,991	480	282	1,250	167
Percentage of Utility Capability	91.8	--	--	--	--	--

-- = Not applicable.

Figure 1. Utility Generating Capability by Primary Energy Source, 1996

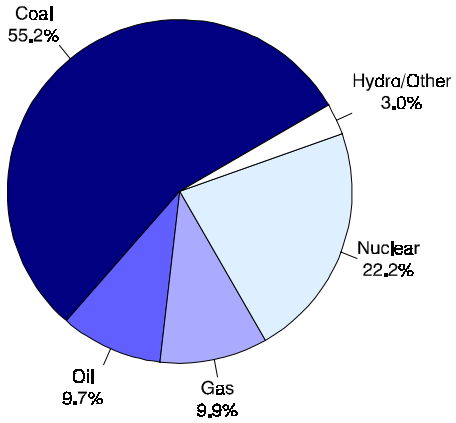


Figure 2. Utility Generation by Primary Energy Source, 1996

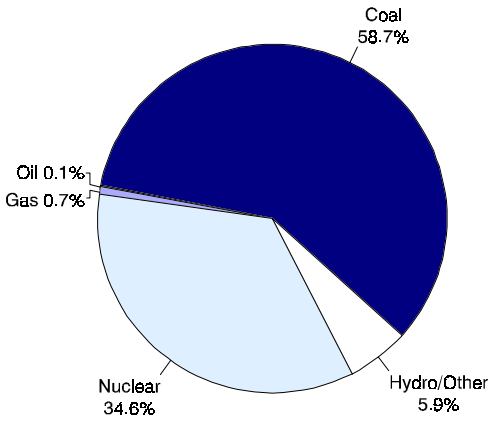


Figure 3. Energy Consumed at Electric Utilities by Primary Energy Source, 1996

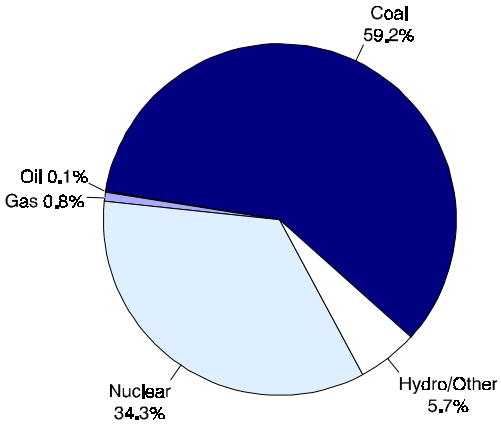


Table 4. Electric Power Industry Generating Capability by Primary Energy Source, 1986, 1991, and 1996
(Megawatts Electric)

Fuel	1986	1991	1996	Percentage Share 1986	Percentage Share 1991	Percentage Share 1996
Coal	2,947	3,087	3,111	*53.1*	*56.6*	*55.2*
Oil	468	311	544	*8.4*	*5.7*	*9.7*
Gas	730	630	559	*13.2*	*11.6*	*9.9*
Nuclear	1,236	1,254	1,250	*22.3*	*23.0*	*22.2*
Hydro/Other	170	168	167	*3.1*	*3.1*	*3.0*
Total Utility	5,550	5,450	5,632	*100.0*	*100.0*	*100.0*
Total Nonutility	W	W	W	--	--	--

-- = Not applicable. W = Withheld.

Table 5. Electric Power Industry Generation of Electricity by Primary Energy Source, 1986, 1991, and 1996
(Thousand Kilowatthours)

Fuel	1986	1991	1996	Percentage Share 1986	Percentage Share 1991	Percentage Share 1996
Coal	9,319,057	13,562,815	16,040,775	*49.5*	*59.0*	*58.7*
Oil	54,115	13,459	19,973	*0.3*	*0.1*	*0.1*
Gas	130,519	303,327	191,682	*0.7*	*1.3*	*0.7*
Nuclear	7,657,529	8,047,662	9,456,814	*40.6*	*35.0*	*34.6*
Hydro/Other	1,677,998	1,044,671	1,613,453	*8.9*	*4.5*	*5.9*
Total Utility	18,839,218	22,971,934	27,322,697	*100.0*	*100.0*	*100.0*
Total Nonutility	W	W	W	--	--	--

-- = Not applicable. W = Withheld.

Table 6. Electric Power Industry Consumption by Primary Energy Source, 1986, 1991, and 1996
(Quadrillion Btu)

Fuel	1986	1991	1996	Percentage Share 1986	Percentage Share 1991	Percentage Share 1996
Coal	0.103	0.146	0.173	*50.2*	*59.1*	*59.2*
Oil	0.001	(s)	(s)	*0.3*	*0.1*	*0.1*
Gas	0.002	0.004	0.002	*0.9*	*1.4*	*0.8*
Nuclear	0.083	0.086	0.100	*40.1*	*35.1*	*34.3*
Hydro/Other	0.018	0.011	0.017	*8.5*	*4.4*	*5.7*
Total Utility	0.206	0.247	0.293	*100.0*	*100.0*	*100.0*
Total Nonutility	W	W	W	--	--	--

-- = Not applicable. W = Withheld. (s) = Nonzero value less than 0.0005.

Figure 4. Utility Generation of Electricity by Primary Energy Source, 1986-1996

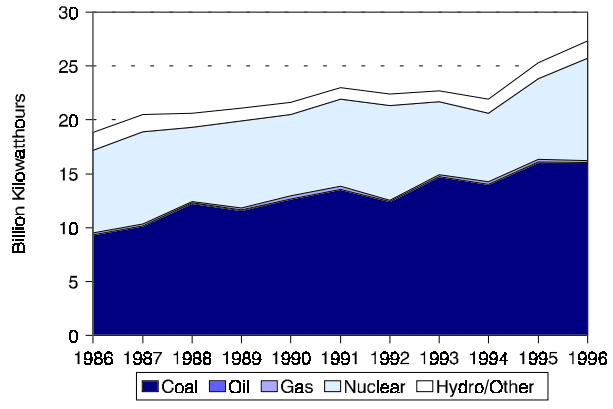


Figure 5. Utility Delivered Fuel Prices for Coal, Oil, and Gas, 1986-1996
(1996 Dollars)

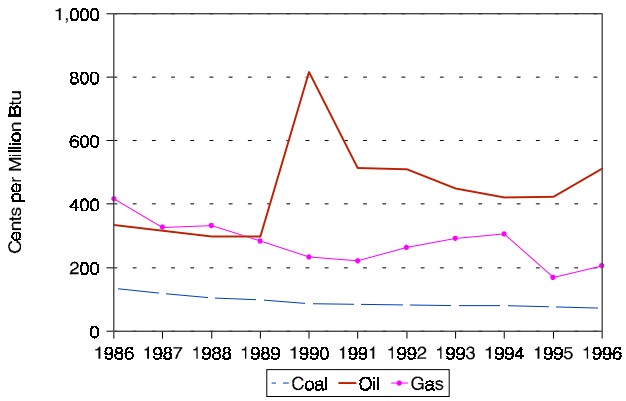


Table 7. Utility Delivered Fuel Prices for Coal, Oil, and Gas, 1986, 1991, and 1996
(Cents per Million Btu, 1996 Dollars)

Fuel	1986	1991	1996	Annual Growth Rate 1986-1996 (Percent)
Coal	134.3	83.8	71.9	-6.0
Oil	334.5	514.0	511.4	4.3
Gas	414.2	221.2	206.1	-6.7

Table 8. Electric Power Industry Emissions Estimates, 1986, 1991, and 1996
(Thousand Short Tons)

Emission Type	1986	1991	1996	Annual Growth Rate 1986-1996 (Percent)
Sulfur Dioxide	38	53	61	5.0
Nitrogen Oxides[d]	58	73	84	3.7
Carbon Dioxide[d]	10,990	15,666	18,511	5.4

Figure 6. Estimated Sulfur Dioxide Emissions, 1986-1996

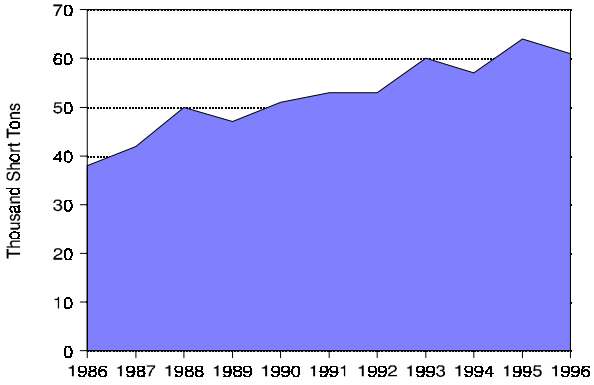


Figure 7. Estimated Nitrogen Oxide Emissions, 1986-1996

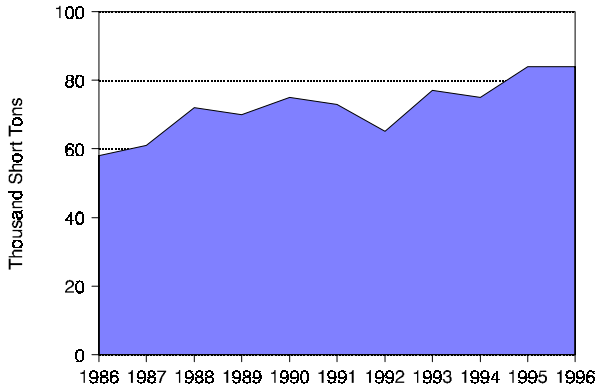


Figure 8. Estimated Carbon Dioxide Emissions, 1986-1996

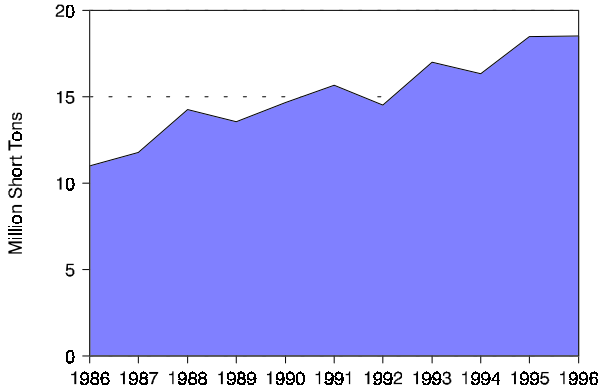


Table 9. Utility Retail Sales by Sector, 1986, 1991, and 1996
(Megawatthours)

Sector	1986	1991	1996	Annual Growth Rate 1986-1996 (Percent)	Percentage Share 1986	Percentage Share 1991	Percentage Share 1996
Residential	6,324,811	7,138,298	7,740,905	2.0	39.8	38.4	36.0
Commercial	4,662,389	5,291,350	6,271,903	3.0	29.4	28.4	29.2
Industrial	3,757,402	4,689,782	6,193,276	5.1	23.7	25.2	28.8
Other	1,135,187	1,485,762	1,291,380	1.3	7.1	8.0	6.0
Total	15,879,797	18,605,192	21,497,484	3.1	100.0	100.0	100.0

Figure 9. Nuclear Power Capacity Factor Comparison, 1986-1996

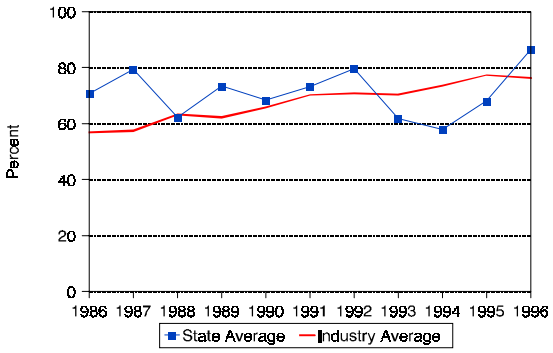


Table 10. Utility Retail Sales Statistics, 1986, 1991, and 1996

Item	Investor-Owned Utility	Public	Federal	Cooperative	Total
			1986		
Number of Utilities	--	155	1	11	167
Number of Retail Customers	--	754,746	13	18,491	773,250
Retail Sales (MWh)	--	15,293,433	148,787	437,577	15,879,797
Percentage of Retail Sales	--	96.3	0.9	2.8	100.0
Revenue from Retail Sales (thousand 1996 $)[e]	--	1,068,627	973	41,667	1,111,550
Percentage of Revenue	--	96.1	0.1	3.8	100.0
			1991		
Number of Utilities	--	152	1	10	163
Number of Retail Customers	--	788,619	14	18,906	807,539
Retail Sales (MWh)	--	17,987,628	146,359	471,205	18,605,192
Percentage of Retail Sales	--	96.7	0.8	2.5	100.0
Revenue from Retail Sales (thousand 1996 $)[e]	--	1,105,364	1,282	38,694	1,145,499
Percentage of Revenue	--	96.5	0.1	3.4	100.0
			1996		
Number of Utilities	--	153	1	10	164
Number of Retail Customers	--	835,130	8	19,777	854,915
Retail Sales (MWh)	--	20,903,151	138,269	456,044	21,497,464
Percentage of Retail Sales	--	97.2	0.6	2.1	100.0
Revenue from Retail Sales (thousand 1996 $)[e]	--	1,107,760	1,876	33,444	1,143,080
Percentage of Revenue	--	96.9	0.2	2.9	100.0

-- = Not applicable.